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(54) Title of the Invention System Providing Nonstandard Information to a Large Indefinite Number of People in a Transportation Vehicle

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Specifications

1. Title of the Invention

System Providing Nonstandard Information to a Large Indefinite Number of People in a Transportation Vehicle

2. Patent Claims

(1) A system providing nonstandard information to a large indefinite number of people in a transportation vehicle comprising a display device for providing nonstandard information capable of changing the display content at any time in the limited space of a transportation vehicle provided as the transportation means to a large indefinite number of people; a means for transmitting the provided information from inside the transportation vehicle to the display device; and a means for receiving the information transmitted from outside of the transportation vehicle and providing the information to said transmission means in the transportation vehicle.

3. Detailed Description of the Invention (Field of Industrial Application)

The present invention relates to a system which takes the opportunity to effectively use the time on a transportation vehicle to provide various information to a large indefinite number of people who are using a limited space such as an airplane, train, and bus as a transportation means by

installing display devices for providing nonstandard information.

(Prior Art)

Conventionally, in a transportation device used by a large indefinite number of people, such as a train or a bus, usually, information such as advertisements and notifications in the vehicle hang down as printed material or are posted on the walls. These are normally displayed for a limited time period. In the case of advertisements, the provider of the transportation means obtains income from advertising contracts over a prescribed period.

A related known example is the "New Video Service System in Vehicles with Liquid Crystal Displays" reported on radio and in newspapers on February 14, 1989.

(Problems to Be Solved by the Invention)

When the prior art described above is viewed from the perspective of providing information, the provided information is displayed for a constant time period as described above because printed material is posted. When the posted information is changed, the printed material posted in the vehicle must be replaced each time. Usually, this posted information is displayed at a large number of places from several locations to several tens of locations in a single vehicle, but when used in several tens of connected cars as in a train, that

number reaches several hundred locations. Consequently, when the posts are changed periodically, the problems are the difficult management and no improvement in the utilization rate of the locations providing information.

In addition, when viewed from perspective of receiving information, because the information provided is the same for a constant time period, new information is viewed once and ignored thereafter. Even if new information is posted, because the posted information is viewed for the most part when in its presence for approximately several tens of minutes, the problem is that the amount of information is low considering the occupation at the posted location. Information provision means using light-emitting diodes exist, but are limited to providing standard information with fixed information such as the name of the station stop, the type of train, etc. There are examples of video and text information provided in the vehicles, but these are limited to providing the information set up in the vehicles, and information is not provided promptly.

An objective of the present invention is to provide a system which solves the problems described above.

(Means for Solving the Problems)

The problems described above are overcome by installing display devices for providing nonstandard information having

provided information; 4, a device for receiving transmissions of region-specific information and signals from the transportation vehicle; 5, a region-specific information controller which controls the transmission of region-specific information and manages the signals received from the transportation vehicle; and 6, an information signal transmission path between the region-specific information controller and the region-specific transmitter.

An example where the transportation vehicle is a bus is explained with reference to Figure 1. The region-specific information transmitter/receiver 4 is installed at each bus stop, collects the provided information transmitted from the region-specific information controller 5, and transmits the information provided through antenna 3 to the transportation vehicle 1. The transportation vehicle 1 receives the information provided through antenna 2, and provides the information to customers through the display information signal transmitter and the information signal display devices installed in the bus. A transportation vehicle 1a provides information stored in region-specific information transmitter 4b through antennas 3b, 2a to the interior of the bus. A transportation vehicle 1b provides information stored in region-specific information transmitter 4n through antennas 3n, 2b to the interior of the bus. The region-specific information controller 5 controls which information is sent to the region-specific information transmitter 4. Consequently, the transmitted information content from region-specific information

displayed content which can be changed at any time and devices for transmitting the information provided on the display devices from inside and outside of a transportation vehicle in a transportation vehicle, such as an airplane, a train, or a bus as the transportation means which has limited space to a large unspecified number of people.

(Operation)

The target provided information is transmitted from a transmitter, which has a function for setting and transmitting the nonstandard provided information placed in a location not used by the passengers in the transportation vehicle, for example, the cockpit in an airplane, the conductor's cab in a train, or the driver's seat on a bus; and a function for receiving and transmitting the information received from outside of the transportation vehicle, and can be displayed on a plurality of display devices set up at locations used by the passengers.

(Embodiments)

Embodiments of the present invention are described with reference to the following figures.

Figure 1 shows the entire system of the present invention. Reference number 1 is a transportation vehicle; 2, an antenna installed in the transportation vehicle; 3, an antenna primarily for transmitting the

transmitters 4a to 4n may differ from each other or be identical. In addition, the transmitted information can be changed for some plurality of regions.

This system is bidirectional. When the transportation vehicle 1 arrives at a stop, the provided information is received from the region-specific information transmitter/receiver described above, and signal notifying the arrival of transportation vehicle 1 at the stop is transmitted to antenna 3 from antenna 2. That signal is received by the region-specific information transmitter/receiver 4, passed through the transmission path 6, and transmitted to the region-specific information controller 5, and the navigation status of the transportation vehicle 1 can be determined. In addition, this status can be transmitted as information to the next stop to notify waiting customers.

In this drawing, the transmission paths 6 are indicated by wires to simplify the representation. Naturally, wireless transmission paths based on communication satellites can be used. In this case, the antennas for transmission and reception such as parabolic antennas can be installed in the region-specific information controller 5 and the region-specific information transmitter/receiver 4.

Figure 2 shows a display information signal transmitter and an information signal display device installed in the transportation vehicle. Reference number 7

is a display information signal transmitter and comprises a video information playback function 7b which primarily plays back video stored on a video disk or a videotape; a text and image information input function 7e which primarily reads out text and image information from a storage medium such as a magnetic disk or a memory card and inputs information depending on the associated input key; a text and image information control function 7d for controlling the enabling of the input information display; a video, text, and image information synthesis function 7c which synthesizes the video information played back by the video information playback function 7b and information from the text and image information control function 7d and selects either one; a region-specific information reception function 7f which primarily receives and stores the region-specific information from outside of the transportation vehicle; an information transmission function 7g which finally transmits the information provided to the customers through the information display devices; and an operation control function 7a for operating these functions. Reference numbers 2 and 3 are antennas; 4, a region-specific information transmission function primarily for transmitting region-specific information; 8, an information display device for displaying the provided information transmitted from the display information display device 7; and 9, transmission paths between these devices. Reference number 10 is

Normally, the provided information provides any one of the video, text, and image information stored on a video disk or a videotape or their combinations. However, when the region-specific information is transmitted through antenna 3 from the region-specific information transmission function 4, the information is received by antenna 2 and the transmitted data are stored by the region-specific information input function 7f, passed through the text and image information control function 7d, text and image information synthesis function 7c, and information transmission function 7g, and displayed on the information signal display device 8. The provided information not only supplements the video and text and image information provided beforehand to the transportation vehicle, but can provide urgent information. For example, a news crawl and information restricted to the region can be provided. This information can change the content of the provided information in units while the transportation vehicle follows its route if the region-specific information transmission function 4 is installed.

Figure 3 shows the form assuming the transportation vehicle is a train. In the example, cultural information 11 in segment 1, event information 12 in segment 2, and theme park information 13 in segment 3 are provided to the information signal display

device 8. In this example, information is provided over the entire surface of the information signal display device 8. The video or text and image information described above are synthesized and provided. A portion of that information can be used and provided.

Figures 4 to 7 show an example of the information signal display device 8 in the transportation vehicle installed in the train. (Effects of the Invention)

According to the present invention, the locations providing information in a transportation vehicle can be put to good use, and compared to when conventional printed material are posted, not only is the management time reduced, an effect is that the power of information provided to the customers is strengthened because promptness and newness are brought out.

4. Brief Description of the Drawings

Figure 1 shows an example of the entire system of the present invention. Figure 2 is a drawing for explaining an example of the device functions in the transportation vehicle. Figure 3 shows an example of the provision of region-specific information. Figures 4, 5, 6, and 7 show examples of the information signal display device installed in the transportation vehicle.

Descriptions of the Reference Numbers

- 1 transportation vehicle
- 2 antenna installed in the transportation vehicle
- 3 antenna installed in a region-specific information transmission function
- 4 region-specific information transmission function
- 5 region-specific information controller
- 6 transmission path
- 7 display information signal transmitter
- 8 information signal display device
- 9 transmission path
- 10 traveling status information input
- 11, 12, 13 examples of region-specific information provision
- 14 example of information provided on printed material

Agent: Katsuo Ogawa, Patent Attorney

Clean copies of the drawings (no changes to the content)

Figure 1

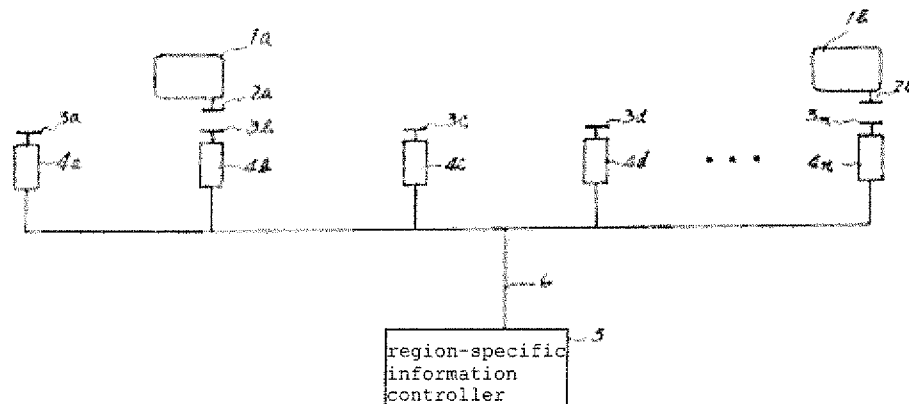


Figure 2

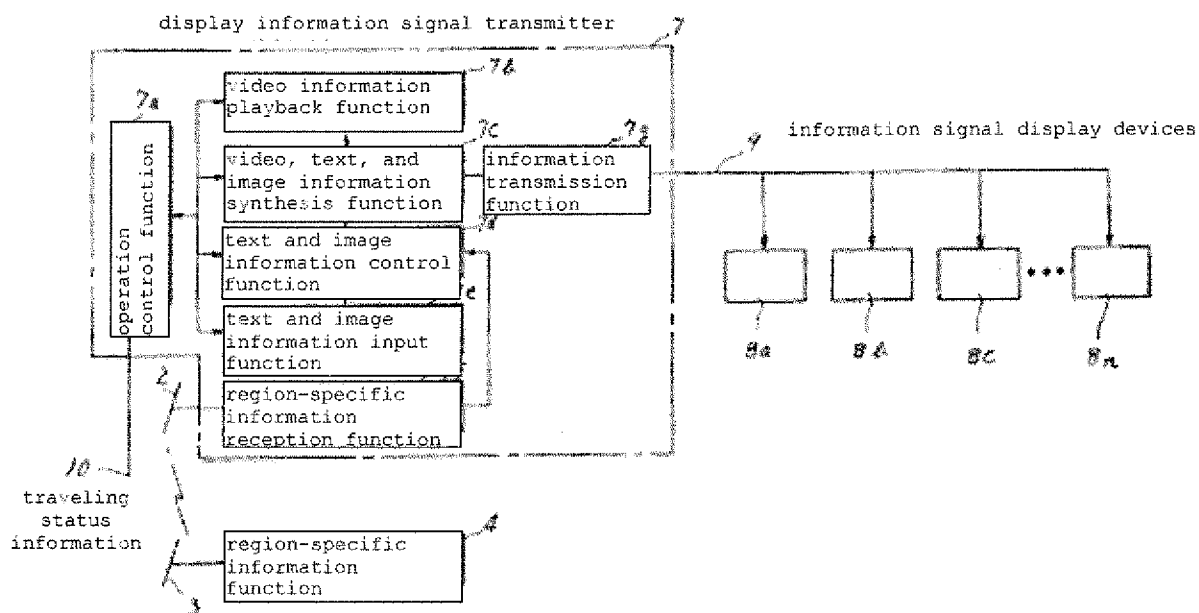


Figure 3

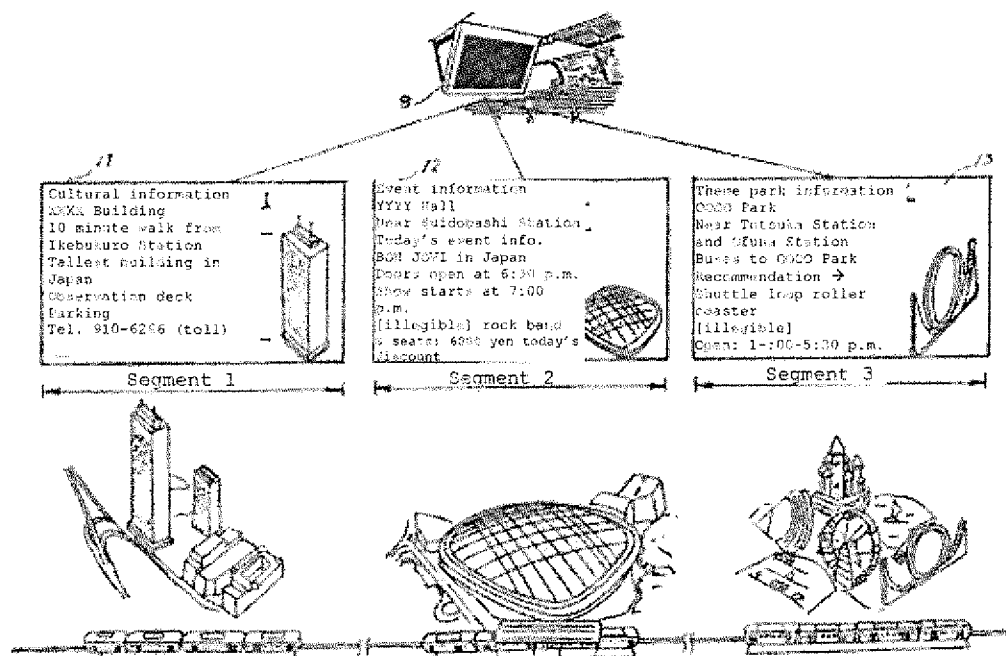


Figure 4

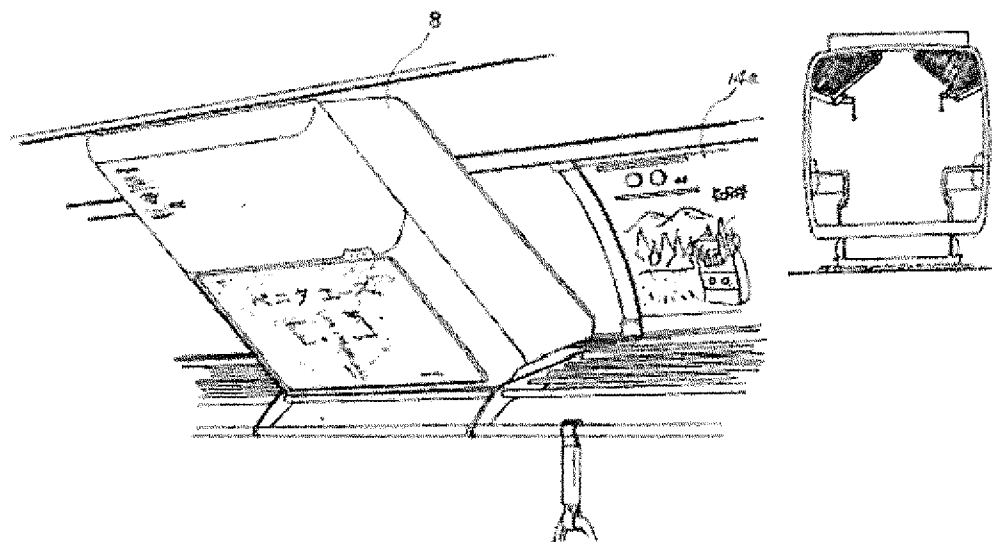


Figure 5

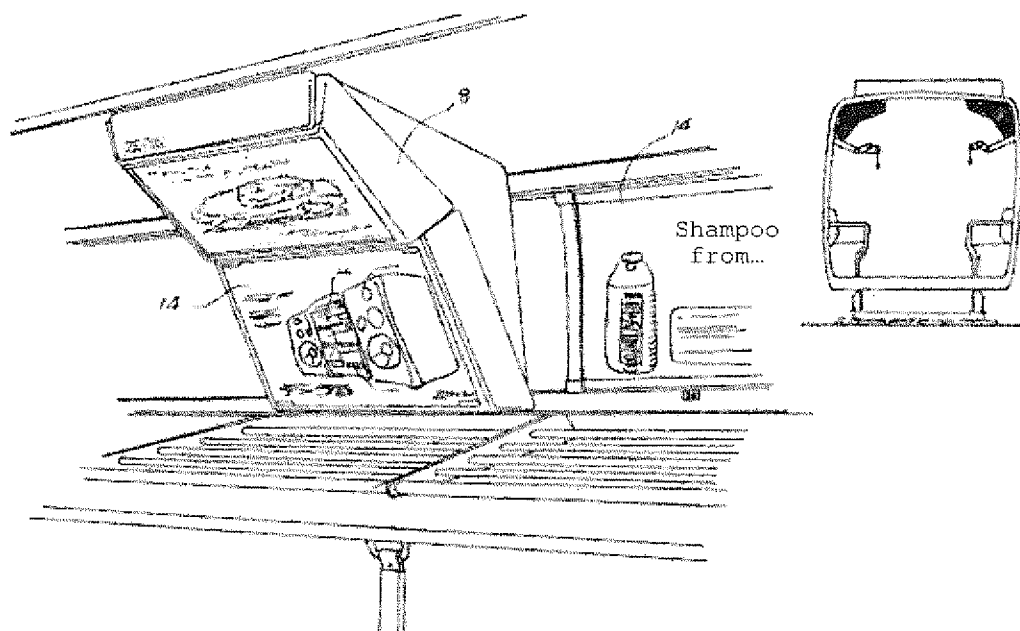


Figure 6

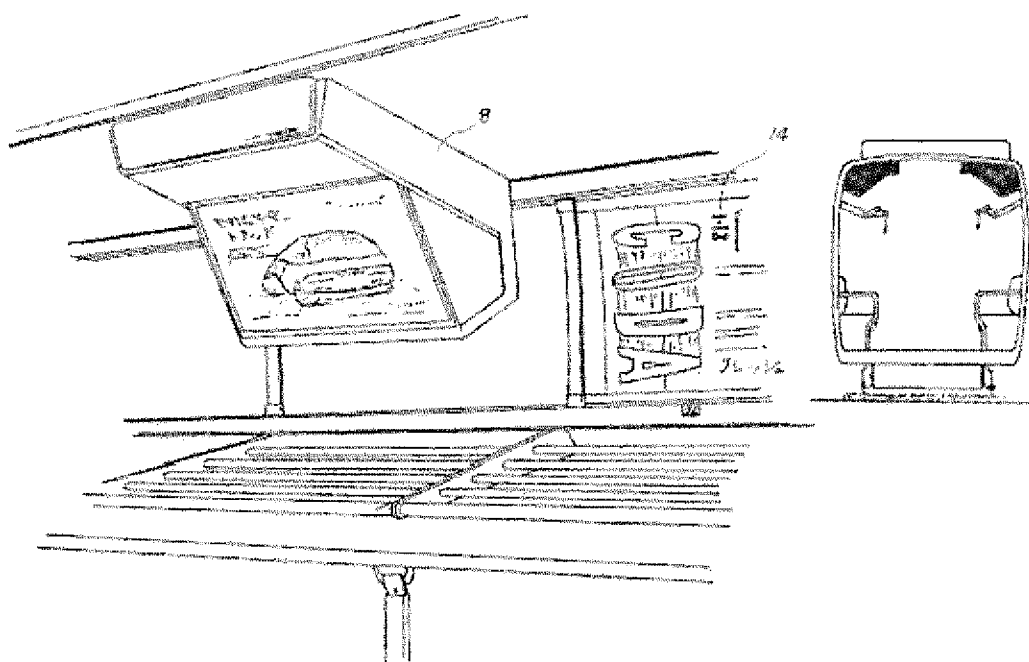
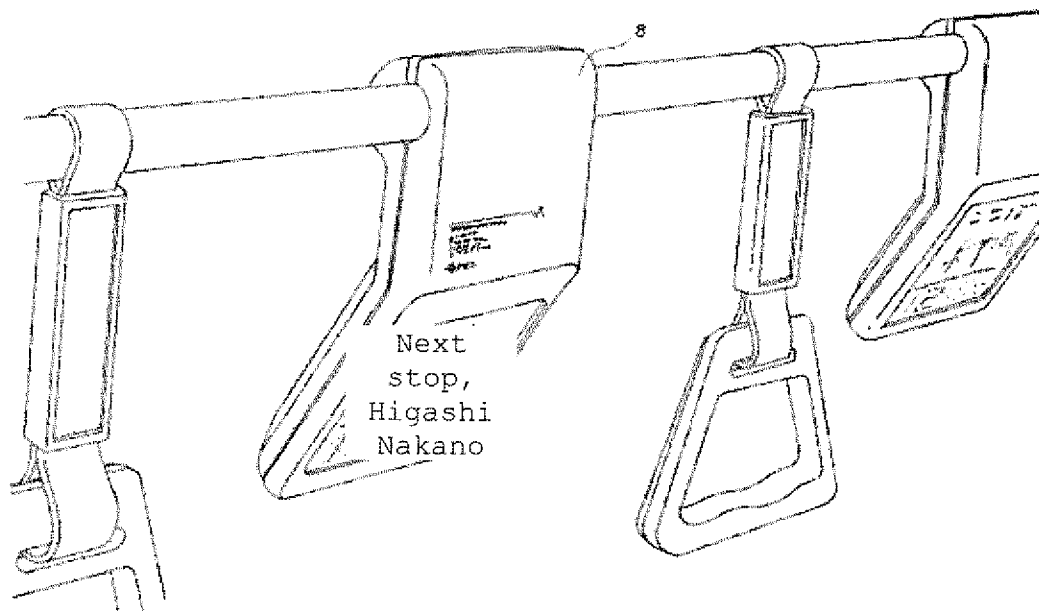


Figure 7



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Procedural Amendment (Formality)

June 21, 1989

To: Commissioner of the Japan Patent Office

Case Indication

1989 Patent Application No. 42966

Title of the Invention: System Providing Nonstandard Information to a Large
Indefinite Number of People in a Transportation
Vehicle

Amending Party

Relationship to the Case: Patent applicant

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Name

Katsuo Ogawa, Patent Attorney (6850) [stamp:]
[illegible]

Date of Amendment Order: May 30, 1989 (dispatch date)

Object of Amendment

All of the drawings

Amended Content

Clean copies on separate papers of all of the drawings
initially appended to the application
(Content not changed)

[stamp:] JPO, 6/21/1989, Second Application Dept.

End

Formal examination